

# Vatsa Patel

Passionate & Proven Software Systems Engineer | Pursuing Master's in CS

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## Highlights

- Developed a Slack plugin application that helps combat abusive conduct at a workplace backed by a Multi-Label classifier using Neural Net. Currently used by the IBM research team.
- Developed Learning & Management Platform for my undergrad University in which lead & mentored a team of 5 engineers.
- My UI/UX interface designs have been featured on Dribbble.
- Ideated a Startup at Qualcomm Labs incubator for which was selected in the top 10 startup ideas out of thousands of applicants.
- Won the Gold medal at the International level in Football representing India at the South Asian Games 2014.
- Submitted and got invited to present my research paper in IEEE on Federated Learning - Privacy Enhanced Collaborative Machine Learning.

## Experience

**3D Room Space, LA | Software Engineering Intern** • May 2020 - Present

- Building the core services for our rental platform to easily find and secure medium-term rentals. And also heavily involved in product design.
- Currently leading the core engineering team of 5 engineers.
- Rearchitected to serverless containerized microservices environment.

**Tech Stack:** GCP Cloud run, GKE | Node, GraphQL | React Native, React, Gatsby

**Freelance Contractor** • May 2020 - July 2020

- **Project Bacchus, NY:** Helped move to a serverless architecture and built Home Feed, in-app messaging & dashboard.
- Built a CLI tool for a client to tag and push docker images to multiple Container Registries with multiple login management integrating with their internal system.
- **Wetherbee's Unofficial:** Refactored old React-Native app and added features to take Quiz, View Flashcards, Watch Learning content, take notes. Also created an Admin panel using Django to curate content.

**A D Patel Institute of Technology | Software Engineer**

**Learning Management Platform** • August 2017 - September 2018

- Envisioned, Designed & Engineered suite of applications that solved the problems in existing paper-based solution in Scheduling, Information sharing, Evaluations, Asset Management, etc.
- Lead & mentored team of 5 engineers, We engineered cross-platform backend services which are architected to scale on low-end hardware.
- Took it as a personal challenge to design best-in-class UI & UX interface. App designs got featured on Dribbble. <http://bit.ly/2TMfOn0>
- In-house Designed & 3D printed biometric fingerprint devices that facilitate classroom authentication centrally.
- Deployed an in-house private Cloud cluster through OpenStack with auto-scaling.

**Tech Stack:** React, React Native, Electron | NodeJS, Golang | MemSQL, Aerospike.

## Skills

### FrontEnd

JavaScript - React, React-Native, Electron, JQuery, WebAssembly  
Kotlin, Android, HTML5, CSS.

### BackEnd

NodeJS, PHP, Python, Java, C++.  
Database: SQL : MySQL, Postgre.  
NoSQL : MongoDB, Redis, Aerospike

### Tools & Libraries

Compute & Networking: OpenStack distributed cluster, PfSense.  
DevOps: GCP, AWS, Docker, Kubernetes, CI/CD  
GraphQL, Jupyter Notebook.

### Design

Sketch, Illustrator, Autodesk Inventor, Keyshot, Principle, Figma, Photoshop.

## Education

**SJSU - San José State University**

Pursuing Masters in Computer Science

Dual Specialization: Enterprise Software Technologies & Networking Software

Jan 2020 - Dec 2021 Expected

**Gujarat Technological University**

Bachelor of Engineering - Information Technology

Graduated First Class with distinction

Jul 2015 - June 2019

**ADIT Alumni Hub** • <http://alumni.adit.ac.in> • August 2016 - March 2018

- Designed & Developed a social platform from scratch to allow Alumni's to reconnect with each other, discover other alumni's in same region and profession, share jobs & events.
- Got 6,400 users within first 3 months.

Tech Stack: React & LEMP Stack

**Smarq Technologies | Founded a Smart Home startup** • Nov 2015 - May 2016

- Envisioned & Designed a tightly-knit ecosystem of smart sensors capable of various automation sequences within a home based on local location of user.
- USP: Smarq Sense - A smart system that generates ever-adapting automation sequences for each user.

**Purva Couture | Software Developer** • April 2015 - December 2015

Designer Fashion Studio

- Single-handedly developed a Business Operations system that managed from Sales to Production to Deliveries handling 700+ clients & revenue of \$1M+.

## Projects

**Reverse proxy to increase downlink bandwidth** • Aug 2019 - Sep 2019

- Developing a reverse proxy that substantially minimizes the effect of Bandwidth Delay Product on TCP Throughput by buffering the file on multiple connections.
- Preliminarily achieved 8x improvement in streaming on intercontinental bandwidth with BBR congestion control.

**Federated Learning - Privacy Enhanced Collaborative Machine Learning** • Jan 2019 - Aug 2019

- Optimized Federated Averaging Algorithm optimized for Large-Scale LSTM-CNN when the input consists of large number of small-sized updates in Homomorphic Encryption.
- Created proof of concept app for local training of cifar-10 classification and subsequent parameter server.
- Submitted a research paper in IEEE Journal

**Finalists at Robocon Asia 2017 - MIT, Pune** Dec 2016 - Mar 2017

- Collaborated in a team of 20 members from diverse domains and applied problem-solving skills combining areas of multiple domains.
- Developed custom firmware & Java application for a fully autonomous robot.

**3D Indoor GPS** June 2017

- Implemented a 3D Indoor GPS solution using UWB to automate lights based on location context.
- Achieved accuracy of avg. 27cm considering wall interference.